On the effectiveness of psychotherapy in personality disorders
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Summary
This thesis is on the effectiveness of different “dosages” of psychotherapy in patients with personality disorder (PD). In the general population about one out of ten people suffers from PD. Patients with PD and their environment experience a high level of distress in daily life. They are faced with problems in many areas of life—work, love, friendships—and are in need of help. Psychotherapy has proven to be a useful tool in helping these patients to improve. Existing psychotherapy research in PD so far has concentrated on comparing different therapeutic schools, while keeping therapy dosage (i.e., the amount of psychotherapy) constant. Mostly, little differences in effectiveness between different schools were found. The term dosage, rooted in medical research and here defined in terms of treatment setting (outpatient, day hospital, inpatient) and treatment duration, is a neglected yet important aspect in psychotherapy research. Therapy dosage has a strong impact on patients’ lives, as well as on treatment costs. In chapter 1, we suggest that different psychotherapy dosages may have different effects and that research into dose-effect relations is a fruitful study area within psychotherapy research.

We conducted three effectiveness studies, based on data from a large prospective multi-centre study in the Netherlands, project SCEPTRE (Study on Cost-Effectiveness of Personality Disorder TREatment). SCEPTRE followed more than 800 patients from six different treatment institutes for three years. In the psychiatric classification system of DSM-IV-TR PDs are categorised in three clusters (cluster A—the odd cluster, cluster B—the dramatic cluster, and cluster C—the anxious cluster). The present studies are categorised in the same way.

Comparing the effects of different treatments confronts us with the problem of selection bias: How do we know that the observed effect is caused by the treatment in question rather than by characteristics of the patients undergoing this particular treatment? To control for selection bias in this non-randomised study, we have to find an appropriate statistical tool.

Taken together, the aims of the present thesis are:

1. Explore what we know about psychotherapy for patients with PD, and what we still need to know.
2. Investigate the effectiveness of different dosages of psychotherapy for different groups of PD patients.
3. Examine a method for comparing the effectiveness of widely differing treatments without randomising patients.
Summary

Background—the evidence base of psychotherapy in PD

Chapter 2 describes the effectiveness of different forms of psychotherapy for patients with PD, as shown by past research. Preliminary studies also demonstrated its cost-effectiveness. However, psychotherapy for PD is not yet established in the minds of policy makers and in the world of insurance and reimbursement. For full acknowledgement of the value of psychotherapy for both PD patients and society, more integrated research is needed. We have to investigate the effects and costs of treatment in high-quality and real-world (cost-)effectiveness studies, covering the broad range of PD. Especially, researchers should study dose-effect relations in psychotherapy, as dosage has a high influence on both costs and effects.

Propensity score—the statistical tool for non-randomisation

In effectiveness research, randomisation is the gold standard to identify true cause-effect relations. All possible confounders have to be eliminated or controlled for. This is most elegantly achieved by randomisation of patients to different treatment options. However, there are situations, especially in (long-term) psychotherapy research, where randomisation is impractical, unethical and/or impossible. The second best option is then to control for possible confounders statistically. Chapter 3 describes the propensity score, a method already widely used in medical and economical research. It is a sophisticated statistical tool to reduce all possible confounders to one single variable. This variable then can be entered in the analysis in various ways. We show that the implementation of this tool in psychotherapy research is possible and useful, and we present a step-by-step protocol for the interested researcher. When applied carefully, the propensity score is a powerful tool to control for selection bias.

Effectiveness studies—the effect of different dosages of psychotherapy

We examine the effectiveness of different dosages of psychotherapeutic treatment for different patient groups in three separate studies: for cluster C, cluster B, and cluster A PD patients. Outcome areas are psychiatric symptoms, social and interpersonal functioning, and quality of life. Results are corrected for the influence of selection bias with the propensity score method.
Cluster C study
In chapter 4 we compare the effects of five different dosages of psychotherapy in 371 patients with one or more cluster C PDs. The following treatment groups are compared:

- long (more than six months) outpatient treatment
- short (up to six months) day hospital treatment
- long day hospital treatment
- short inpatient treatment
- long inpatient treatment.

One year after baseline, all patients improved significantly on all outcome measures. The highest gains are observed in the patients receiving short inpatient treatment. These patients improved significantly more than patients from other treatment groups. This result was most prominent with regard to psychiatric symptoms, but also applied to the outcome areas of psychosocial functioning and quality of life. We conclude that—even when corrected for the possible influence of patient characteristics—short-term inpatient psychotherapy is an interesting option for patients with cluster C PDs and should be investigated further in terms of long-term effectiveness and cost-effectiveness.

Cluster B study
In chapter 5 we compare the effects of three different dosages of psychotherapy in 207 patients with one or more cluster B PDs, mostly borderline PD. The following treatment groups are compared:

- outpatient treatment
- day hospital treatment
- inpatient treatment.

All patients improved significantly eighteen months after baseline, with most improvement observed in the inpatient group. The difference in improvement of psychiatric symptoms between outpatient and inpatient treatment was marginally significant in favour of inpatient treatment. For the remaining outcome areas, no significant differences between treatment groups were observed. We conclude that inpatient treatment should not a priori be excluded from the package of treatment options for cluster B PD patients but—in contrary—deserves more attention in both research and clinical practice. Important future areas of research in cluster B PD patients are the question of the “ideal dosage” (as we found no significant difference between day hospital and inpatient treatment) and differential effectiveness for different subgroups of cluster B PD patients.
**Summary**

**Cluster A study**

In chapter 6 we compare the effects of three different dosages of psychotherapy in 57 patients with one or more cluster A PDs, mostly paranoid PD. The following treatment groups are compared:

- outpatient treatment
- day hospital treatment
- inpatient treatment.

Patients in day hospital and inpatient treatment showed the highest improvement eighteen months after baseline. This has to be interpreted carefully, however, as it appeared from the analysis of the overlap of propensity scores, that the three treatment groups were not readily comparable. We conclude from this cluster A study that improvement is possible in this rather vulnerable patient population that has not gained much attention yet in psychotherapy and psychotherapy research.

**Conclusion—the meaning of the present results**

In chapter 7 it is concluded that the present results confirm the general effectiveness of psychotherapy for patients with PD. More importantly, our research opens new perspectives on psychotherapy and psychotherapy research by emphasising the meaning of dosage when judging the effectiveness of therapy. Dosage seems to matter. In general, we can conclude that the more intensive forms of treatment (day hospital and inpatient treatment) yield better results. However, the idea of “the more, the better” does not seem to apply to the cluster C PD population, as short-term inpatient treatment shows the best results in this patient group. This short-term and at the same time high pressure format of treatment is highly effective in cluster C PD patients, even when measured several months after treatment termination.

One major asset of this study is that it is conducted in regular clinical practice following a large sample of PD patients. External validity is further enhanced by minimal exclusion criteria and a high follow-up response. A second asset is the rigourous control of possible confounders in this non-randomised study by means of the propensity score. The present research has limitations. One important limitation is missing information on Axis I diagnoses, due to the practical reason of not overloading patients with assessment instruments. A second limitation is that we did not take into account the possible influence of theoretical school. We do know from previous research that theoretical school mostly is of little importance when comparing specialised treatments. Therefore we concentrated on the comparison
between dosages, leaving the puzzle of disentangling the effects of theoretical content and dosage to future researchers.

Our general conclusion is that psychotherapy brings about positive change for patients of all clusters of PDs, most prominently in the area of psychiatric symptoms, but also in psychosocial functioning and quality of life. A remarkable finding is the high effectiveness of short-term inpatient psychotherapy for patients with cluster C PDs. This information could be a good starting point for implementing the present results in clinical practice. The main mission of this thesis is to inspire researchers and clinicians to include dosage in mental health care considerations. For policy makers, insurance experts, scientists, therapists and patients alike, the message is: Dosage matters.